

**Replace Large Class Vessel P/V Enforcer****FY2024 Request: \$7,500,000****Reference No: AMD 64846****AP/AL:** Appropriation**Project Type:** Equipment / Commodities**Category:** Public Protection**Location:** Southeast Alaska**House District:** Southeast Region (HD 33-36)**Impact House District:** Southeast Region (HD 33-36)**Contact:** Pam Halloran**Estimated Project Dates:** 07/01/2023 - 06/30/2028 **Contact Phone:** (907)465-5501**Brief Summary and Statement of Need:**

The P/V Enforcer is a "large class vessel" that has reached the end of its useful life and needs to be replaced. A recent discovery of damage to the vessel has made it immediately inoperable, so this request could not have been anticipated sooner.

<b>Funding:</b>	<b>FY2024</b>	<b>FY2025</b>	<b>FY2026</b>	<b>FY2027</b>	<b>FY2028</b>	<b>FY2029</b>	<b>Total</b>
1004 Gen Fund	\$7,500,000						\$7,500,000
<b>Total:</b>	<b>\$7,500,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$7,500,000</b>

☐ State Match Required   
 ☐ One-Time Project   
 ☐ Phased - new   
 ☐ Phased - underway   
 ☐ Ongoing  
 0% = Minimum State Match % Required   
☒ Amendment   
☐ Mental Health Bill

**Operating & Maintenance Costs:**

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Prior Funding History / Additional Information:****Project Description/Justification:**

The P/V Enforcer is one of 88 vessels of various sizes operated by Public Safety. The vessel is an 84' patrol vessel dedicated to Southeast Alaska, that was built for the Department of Public Safety in 2004. The vessel has been taken out of service for a variety of mechanical and structural issues and for the health and safety of its crew due to catastrophic mold infestation.

A cost benefit analysis has determined that a new vessel is needed, as opposed to repairing the P/V Enforcer. A new vessel is estimated to cost \$7.5M.

The P/V Enforcer is on a 30-year hull, and it has been in service for nearly 20 years. By industry standards, this vessel could be considered a total loss due to the cost of addressing all of issues noted above to make is serviceable again. The repairs would be cost-prohibitive, compared with the cost of replacing the vessel completely. To make the necessary repairs, the ship would need to be put into drydock and be completely gutted and rebuilt. The estimated cost of repairing the vessel, including delivering the ship to one of the 7-8 shipyards on the West coast that can make the required repairs, are roughly estimated to be upwards of \$3.0M, and will likely take 18-24 months. Enacting

these repairs is only likely to extend the life of the ship up to the current life expectancy of the hull, which would be another 10 years.

A Southeast Alaskan based patrol vessel provides the department the ability to:

- Respond to natural disasters, such as the coordinated response to the landslide in Haines in December of 2020. Large class vessels like the P/V Enforcer operate as a "mobile command center" when needed.
- Provide emergency response to villages, small communities and other remote areas of the Alaska coastline.
- Respond to vessels in distress, aircraft incidents, medical emergencies and search and rescue efforts.
- Conduct criminal investigations by providing a fully functional "floating office" for state troopers and other law enforcement, in communities where the Alaska State Troopers might otherwise not have a significant presence or have adequate office space for such efforts.
- Enforce laws protecting natural resources.

In its current condition, P/V Enforcer has several conditions that are contributing to catastrophic failure of the vessel, making it cost-prohibitive to consider repairing it. These include the following:

#### EXTERIOR

- Crab deck non-skid coating has failed and would need to be reapplied.
- The wood decking needs to be replaced with the proper wood conducive to paint adhesions.
- Ladders are found to be failing to meet OSHA safety standards and need to be replaced.
- Emergency egresses lack proper markings.
- The bridge windows have failed and will need to be replaced.
- Threshold transitions lack proper markings.
- Embark/debark location for skiffs creates a significant tripping hazard which needs to be mitigated or replaced.
- Both fore and aft cranes are outside of inspection period and service life. In addition, the current crane is no longer safe to use, unless the water condition is flat calm, reducing the ability of skiff operations during rough seas.

#### INTERIOR

- Extensive corrosion in interior hull on both sides of the vessel, which would require extensive repairs.

#### BERTHING, HEADS & WATER SYSTEM

- Catastrophic mold infestation throughout the entire interior. This includes the state rooms, heads, forepeak, engine room, laundry room, galley, mess deck and pilothouse.
- Blackwater (sewage) system is starting to fail. The system has an incomplete construction and no way to clean it out for continued usage.
- Improper ventilation design in the heads has contributed to the condensation problem in the vessel, cultivating an environment for mold and rust.
- Improper interior design and building materials in the interior of the vessel have also contributed to the mold and corrosion problems.

- There is currently no greywater system (used for all wastewater not containing fecal contamination) installed on the vessel. Further use of the vessel would require installation of a greywater system.
- The current blackwater system (for wastewater that is discharged from the head) is not set up to pump off to local marinas.

**ENGINE ROOM AND AUXILIARY MACHINERY SPACES**

- Generators currently have more than 24K hours on them and will have to be replaced.
- Fire pump needs a rebuild or replacement
- Shafts require retooling or replacement
- Cofferdams and needed for keel coolers
- Keel coolers are leaking coolant and need to be removed and replaced
- Day tanks need to be inspected and serviced. Welding and piping repairs are required due to the leaking fuel system
- Alarm systems need to be replaced as the current system is generating ghost alarm notifications
- Camera systems need to be installed in the engine room for safety
- Need to install remote starts for main engines
- Need to install a remote fuel shutoff
- The engine room emergency egress hatch is not accessible, creating a dangerous situation in an emergency
- The starboard reduction gear is leaking oil and needs outside services support
- The heating system has failed and is no longer support. It will need to be replaced.
- Anchor PTO hydraulics have no redundancy. The hydraulic pump is due for rebuild or replacement.
- Hydraulic plumbing is improperly supported
- Hydraulic lines do not have protection barriers for operators in the event of failure
- Aft deck windlass hydraulic hoses are due for replacement
- Anchor PTO hydraulics have no redundancy and the hydraulic pump is due to be rebuilt or replaced.
- Hydraulic plumbing is improperly support
- Hydraulic lines have not protection barriers for operators in the event of a failure
- Aft deck windlass hydraulic hoses are due for replacement
- Steering system hydraulic hoses are due for replacement
- Emergency steering system loses hydraulic pressure and is not reliable
- The sea chest is improperly constructed and has significant metal loss
- Engine room decking is improperly constructed, creating many tripping hazards at height transitions
- Fuel transfer manifold and piping are showing signs of failure and would need to be rebuilt or repaired
- The air exchange system has no record of being changed and a new system would need to be installed with the larger footprint of the engine room
- The engine room lacks watertight integrity between berthing areas
- The egress hatch lacks watertight integrity and leaks water from the aft deck
- Egress hatch can't be readily opened from the interior of vessel
- Plumbing system and valves are improperly marked or painted

- The current fuel water separators are showing signs of failure and are "farm grade," not "marine grade" equipment
- Vessel lacks proper hazmat storage. A new storage system would need to be installed.
- Address closed crank ventilation systems that were not properly installed
- Improperly installed potable water piping needs to be corrected
- Anchorage windlass leaking hydraulics are leaking and need to be repaired/replaced
- Pot launcher hydraulics are leaking and need to be rebuilt/replaced
- Crab block creeping repaired or replaced
- Washdown/backup fire pump doesn't hold prime
- Engine room emergency lighting is inadequate and will need to be replaced.

Additional factors to consider:

- The current vessel can only do 9 knots, which is very slow for most emergency response and enforcement needs.
- The current vessel burns a significant amount of fuel and is not currently configured to use biodiesel.
- The estimated "scrap value" of this vessel "as is" is estimated to be \$300K. It could be sold at auction and those proceeds would be applied the cost of a new vessel.
- The current lack of ability to access the bilges and monitor the interior skin of the ship is what allowed the current mold problem to go undetected and untreated for this long. Addressing future access to the interior skin of the ship would be more easily accomplished during construction of a new vessel, rather than trying to retrofit the existing vessel.
- Access to and removal of components inside the ship can't be easily performed and retrofitting the vessel to allow this access and removal is considered cost-prohibitive.

Current cost estimates for a new ship design and construction are estimated to be \$7.5M and will likely take up to two years. The department will manage its needs in Southeast Alaska with its existing fleet during this time, although doing so will take an additional toll on those vessels and temporarily take them away from their current duty stations.

Specifications and benefits for construction of a new vessel:

- New "large class vessel" would be constructed to 80'-100' in length. This would ensure access to most smaller harbors throughout the state but also provide the maximum sea-worthy vessel for open-water in Alaska.
- The replacement vessel would be built to meet or exceed all Federal Code of Regulation standards as well as meeting the needs of the department
- The construction of the new vessel would be closely monitored for quality control and it will be held to the highest standard. Only proven designs from reputable boat builders will be considered.
- The hull will be aluminum hull and "super-structure" that will be designed to resist a significant amount of direct impact. It will either be a catamaran dual hull or a single hull design.
- It will be powered with twin engines and be capable of a cruising speed of 20 knots (more than double the existing vessel) and be operable in seas up to 20 feet and winds up to 100MPH.

THE OPERATIONAL BENEFITS OF THIS NEW VESSEL INCLUDE THE FOLLOWING:

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- Reduced response time which reduces wear and tear on personnel and the resources needed for the response
- Expands operational capacities
- Increased public safety footprint
- Reduced operational cost to include lower operating and shipyard costs
- Increased safety of operations
- Decreased crew fatigue due to reduced transit times
- Sets up cycling of large vessel replacements

### COST BENEFIT ANALYSIS

The cost savings to the state of a new vessel would be immediate, as the proposed vessel will be of lighter weight, have the newest technology and will be a much more efficient design for Southeast Alaska. Fuel costs to run the new vessel will be reduced by an estimated 35%. That equates to roughly half a million dollars over the next 20 years, at today's fuel prices. In addition, aluminum vessels do not rust or corrode like steel, they do not require paint barriers above the waterline and it will be designed for long-term maintenance, reducing shipyard costs by up to 40%. A new vessel will provide reliability and warranty compensation with an estimated lifespan of 20+ years.

The Department maintains two other patrol vessels in Kodiak, that serve the island itself along with the Gulf of Alaska, Alaska Peninsula, Aleutian Islands, Bering Sea, Bristol Bay. Utilizing those vessels in Southeast Alaska would require big water crossings and crew transitions from Kodiak to Southeast Alaska multiple times per year. This would cause significant amount of wear and tear on the vessels, as well as staff overtime and travel costs.